



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,953	02/12/2004	Max Donath	U11.12-0158	3209
27367	7590	01/03/2006	EXAMINER	
WESTMAN CHAMPLIN & KELLY, P.A. SUITE 1400 - INTERNATIONAL CENTRE 900 SECOND AVENUE SOUTH MINNEAPOLIS, MN 55402-3319				SHAPIRO, LEONID
ART UNIT		PAPER NUMBER		
		2677		

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/626,953	DONATH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Leonid Shapiro	2677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 12 February 2004.

2a)  This action is FINAL.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 25-48 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 25-48 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 25, 33, 35, 39, 43, 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Endo et al. (US Patent No. 6,289,278 B1).

As to claim 25, Endo et al. teaches a mobility assist device (See Col. 1, Lines 6-11) comprising:

a location system providing a location signal indicative of a location of a mobile body (See Fig. 1, items 101, 102, 114, 200, 2001, Col. 1, Lines 26-52 and Col. 4, Lines 42-67);

a data storage system storing object information indicative of objects located in a plurality of locations (See Fig. 8, item 203, Col. 7, Lines 36-65);

a display system (See Fig. 8, item 115, Col. 7, Lines 56-65); and

a controller (See Fig. 1, item 112, Fig. 8, item 201) coupled to the location system (See Fig. 8, items 207-210), the data storage system (See Fig. 8, item 203) and the display system (See Fig. 1, item 115 and Fig. 8, item 203), and configured to receive the location signal and retrieve object information based on the location signal (See Fig. 1, items 101, 102, 114, 200, 2001, Col. 1, Lines 26-52 and Col. 4, Lines 42-

67) and provide a display signal to the display system such that the display system displays objects in substantially a correct perspective of an observer located at the location of the mobile body (See Fig. 17, items 2000-2001, from Col. 13, Line 36 to Col. 14, Line 19).

As to claim 33, Endo et al. teaches a mobile body orientation detection system coupled to controller and the mobile body, detecting an orientation of the mobile body and providing an orientation signal to the controller (See Fig. 1, items 101-102, 112, Col. 3, Lines 26-52 and Col. 4, Lines 20-41).

As to claim 35, Endo et al. teaches the object information is intermittently updated (See Col. 2, Lines 6-18).

As to claim 39, Endo et al. teaches a method of monitoring operation of mobility assist device (See Col. 1, Lines 6-11) having a location system providing a location signal indicative of a location of a mobile body (See Fig. 1, items 101, 102, 114, 200, 2001, Col. 1, Lines 26-52 and Col. 4, Lines 42-67), a data storage system storing object information indicative of objects located in a plurality of locations (See Fig. 8, item 203, Col. 7, Lines 36-65), a display system (See Fig. 8, item 115, Col. 7, Lines 56-65); a ranging system detecting a location of objects and transitory objects relative to the mobile body and providing an object detection signal based thereon (See Fig. 1, items 101, 200-2002, Col. 4, Lines 20-67), and a controller (See Fig. 1, item 112, Fig. 8, item 201) coupled to the location system (See Fig. 8, items 207-210), the data storage system (See Fig. 8, item 203) and the display system (See Fig. 1, item 115 and Fig. 8, item 203), and configured to receive the location signal and object detection signal and

retrieve object information based on the location signal (See Fig. 1, items 101, 102, 114, 200, 2001, Col. 1, Lines 26-52 and Col. 4, Lines 42-67) and provide a display signal to the display system such that the display system displays objects in substantially a correct perspective of an observer located at the location of the mobile body (See Fig. 17, items 2000-2001, from Col. 13, Line 36 to Col. 14, Line 19), the method comprising: receiving the object detection signal (See Fig. 1, items 101, 200-2002, Col. 4, Lines 20-33);

determining whether the object detection signal correlates to the object information in the data storage system (See Fig. 1, items 101, 200-2002, Col. 4, Lines 33-41); and

providing an output at least indicative of a system problem when the object detection signal and the object information are determined not to correlate (See Fig. 2, items 132-133, Col. 6, Lines 30-36).

As to claim 43, Endo et al. teaches display system providing a visual display (See Fig. 1, item 115).

As to claim 48, Endo et al. teaches display system is mounted to the mobile body (See Fig. 1, Col. 3, Lines 25-52).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. in view of Zamojdo et al. (US patent No. 6,272,431 B1).

As to claim 26, Endo et al. does not disclose conformal augmented display of the objects based on display signals.

Zamojdo et al. teaches a **conformal** display of stored objects (See definition of **conformal** display in Applicant's disclosure, page 29, Lines 10-16) in Figure 3, items 15-16, 621, which is the virtual image of connecting lines, arrows that are substantially aligned with the real ground landmarks with corresponding points on the map in a proper perspective which could be seen by the driver with an unobstructed field of view (See Col. 3, Lines 31-37 and Col. 2, Lines 31-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Zamojdo et al. into Endo et al. system in order to allow driver to obtain a mental image of road layout (See Col. 1, Lines 56-59 in the Zamojdo et al. reference).

As to claim 27, Zamojdo et al. teaches the stored objects are positioned within a field of view of the operator in the operator position, at a location which approximately overlies the corresponding actual objects in the field of view (See Fig. 3, items 15-16, Col. 2, Lines 4-7 and 32-45, Col. 3, Lines 3-8, Col. 4, Lines 3-18).

As to claim 28, Zamojdo et al. teaches a projection system providing projection of an image of the objects (See Fig. 1, items 11, 16) and a partially reflective, partially transmissive screen, positioned in the field of view of the observer to allow the observer

to see through the screen and to see the image of the objects projected thereon. (See Fig. 3, items 15-16, Col. 2, Lines 4-7 and 32-45, Col. 3, Lines 3-8, Col. 4, Lines 3-18).

3. Claims 29-32, 40-42, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. in view of Lemenson et al. (US patent No. 6,226,389 B1).

As to claims 29-30, Endo et al. does not disclose a ranging system, coupled to the controller and configured to detect transitory objects and provide a detection signal to the controller indicative of the location of the transitory object 'relative to the mobile body.

Lemelson et al. teaches mobile body comprises a vehicle (See Col. 2, Lines 21-22) travels over a roadway and wherein the displayed sensed objects correspond to transitory objects, such as other vehicles or pedestrians, or animals proximate to the roadway, not fixed in place during normal operating circumstances of the roadway (See Fig.1-2, items 17, 82, in description See Col.2, Lines 19-67).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate teachings of Lemelson et al. into Endo et al. apparatus in order to assist the driver of a motor vehicle in preventing accidents or minimizing the effects of same (See Abstract of Lemenson et al. reference).

As to claims 31-32, Lemenson et al. teaches controller is configured to filter the display signal such that the display system displays only transitory objects based on selected criteria (See from Col. 2, Line 44, to Col. 3, Line 1).

As to claim 40, Endo et al. teaches accessing the data storage system based on location signal (See Fig. 8, items 201-203, Col. 7, Lines 36-650.

Endo et al. does not disclose determining whether the object detection signal indicates the presence of objects indicated by the object information for the location of the mobile body.

Lemelson et al. teaches disclose determining whether the object detection signal indicates the presence of objects indicated by the object information for the location of the mobile body (See Col. 2, Lines 29-63).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate teachings of Lemelson et al. into Endo et al. apparatus in order to assist the driver of a motor vehicle in preventing accidents or minimizing the effects of same (See Abstract of Lemelson et al. reference).

As to claim 41, Endo et al. doe not disclose when the object detection signal does not indicate the presence of objects indicated by the object information for the location of the mobile body, providing a user observable indication of a possible malfunction.

Lemelson et al. teaches when the object detection signal does not indicate the presence of objects indicated by the object information for the location of the mobile body, providing a user observable indication of a possible malfunction (See Col. 2, Lines 44-63).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate teachings of Lemelson et al. into Endo et al. apparatus in order

to assist the driver of a motor vehicle in preventing accidents or minimizing the effects of same (See Abstract of Lemelson et al. reference).

As to claim 42, Lemelson et al. teaches when the object detection signal indicates the presence of objects indicated by the object information for the location of the mobile body, providing a user observable indication of proper operation (See Col. 2, Lines 29-43).

As to claim 44, Endo et al. teaches a method of controlling a mobility assist device (See Col. 1, Lines 6-11) having a location system providing a location signal indicative of a location of a mobile body (See Fig. 1, items 101, 102, 114, 200, 2001, Col. 1, Lines 26-52 and Col. 4, Lines 42-67), a data storage system storing object information indicative of objects located in a plurality of locations (See Fig. 8, item 203, Col. 7, Lines 36-65), a display system (See Fig. 8, item 115, Col. 7, Lines 56-65); a ranging system detecting a location of objects and transitory objects relative to the mobile body and providing an object detection signal based thereon (See Fig. 1, items 101, 200-2002, Col. 4, Lines 20-67), and a controller (See Fig. 1, item 112, Fig. 8, item 201) coupled to the location system (See Fig. 8, items 207-210), the data storage system (See Fig. 8, item 203) and ranging system (See Fig. 1, items 101, 200-2002, Col. 4, Lines 20-67) and the display system (See Fig. 1, item 115 and Fig. 8, item 203), and comprising:

receiving the location signal and object detection signal (See Fig. 1, items 101, 102, 114, 200, 2001);

retrieving object information based on the location signal (See Fig. 1, items 101, 102, 114, 200, 2001, Col. 1, Lines 26-52 and Col. 4, Lines 42-67).

Endo et al does not disclose providing a filtered display signal to the display system, the display signal being filtered such that the display system displays objects and transitory objects, based on operator selected filtering criteria, in substantially a correct perspective of an observer located at the location of the mobile body.

Lemenson et al. teaches controller is configured to filter the display signal such that the display system displays only transitory objects based on selected criteria (See from Col. 2, Line 44, to Col. 3, Line 1).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate teachings of Lemelson et al. into Endo et al. apparatus in order to assist the driver of a motor vehicle in preventing accidents or minimizing the effects of same (See Abstract of Lemenson et al. reference).

4. Claims 34, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. in view of Streid (US patent No. 6,196,845 B1).

As to claim 34, Endo et al. does not disclose a head orientation tracking system, coupled to controller, detecting an orientation of the observer's head and providing ahead orientation to the controller.

Streid teaches a head orientation tracking system, coupled to controller, detecting an orientation of the observer's head and providing ahead orientation to the controller (See Fig. 2, items 11, 16, from Col. 6, Line 55 to Col. 7, Line 8).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate Streid teachings into Endo et al. apparatus in order to improve the vision system (See Col. 1, Lines 5-8 in Streid reference).

As to claim 38, Streid teaches an eyeglass mounted display system (See Col. 1, Lines 29-57).

5. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. in view of Forrest et al. (US patent No. 6,297,516 B1).

Endo et al. does not disclose teaches a helmet-mounted and visor-mounted display systems.

Forrest et al. teaches a helmet-mounted and visor-mounted display systems (Col. 10, Lines 43-49 and Col. 11, Lines 7-12).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate Forrest et al. teachings into Endo et al. apparatus in order to increase the range of applications.

6. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. in view of Abreu (US patent No. 6,120,460).

Endo et al. teaches a mobility assist device (See Col. 1, Lines 6-11) comprising:  
a location system providing a location signal indicative of a location of a mobile body (See Fig. 1, items 101, 102, 114, 200, 2001, Col. 1, Lines 26-52 and Col. 4, Lines 42-67);

a data storage system storing object information indicative of objects located in a plurality of locations (See Fig. 8, item 203, Col. 7, Lines 36-65); a display system (See Fig. 8, item 115, Col. 7, Lines 56-65); and a controller (See Fig. 1, item 112, Fig. 8, item 201) coupled to the location system (See Fig. 8, items 207-210), the data storage system (See Fig. 8, item 203) and the display system (See Fig. 1, item 115 and Fig. 8, item 203), and configured to receive the location signal and retrieve object information based on the location signal (See Fig. 1, items 101, 102, 114, 200, 2001, Col. 1, Lines 26-52 and Col. 4, Lines 42-67) and provide a display signal to the display system such that the display system displays objects in substantially a correct perspective of an observer located at the location of the mobile body (See Fig. 17, items 2000-2001, from Col. 13, Line 36 to Col. 14, Line 19).

Endo et al. does not disclose providing a stimulation signal to the neurostimulation system.

Abreu teaches providing a stimulation signal to the neurostimulation system (See Fig. 59A-59, Col. 94, Lines 41-55).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate Abreu teachings into Endo et al. apparatus in order to diminishing car accidents (See Col. 18, Lines 10-13 in the Abreu reference).

7. Claims 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. in view of Lemenson et al. (US patent No. 6,226,389 B1).

Endo et al. and Abreu do not disclose a ranging system, coupled to the controller and configured to detect transitory objects and provide a detection signal to the controller indicative of the location of the transitory object 'relative to the mobile body.

Lemelson et al. teaches mobile body comprises a vehicle (See Col. 2, Lines 21-22) travels over a roadway and wherein the displayed sensed objects correspond to transitory objects, such as other vehicles or pedestrians, or animals proximate to the roadway, not fixed in place during normal operating circumstances of the roadway (See Fig.1-2, items 17, 82, in description See Col.2, Lines 19-67).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate teachings of Lemelson et al. into Endo et al. and Abreu apparatus in order to assist the driver of a motor vehicle in preventing accidents or minimizing the effects of same (See Abstract of Lemenson et al. reference).

#### ***Telephone Inquire***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LS  
11.22.05

AMR A. AWAD  
PRIMARY EXAMINER  
